



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,786	12/07/2001	Jan Lindskog	000500-277	7881
27045	7590	04/06/2006	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			SAMS, MATTHEW C	
			ART UNIT	PAPER NUMBER
			2617	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/004,786  
Filing Date: December 07, 2001  
Appellant(s): LINDSKOG ET AL.

**MAILED**

**APR 06 2006**

**Technology Center 2600**

---

Roger S. Burleigh  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1/19/2006 appealing from the Office action mailed 7/27/2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6067297	Beach	5-2000
6463307	Larsson et al.	10-2002
6192230	van Bokhorst et al.	2-2001
5502724	Chen et al.	3-1996

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 7, 11, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US-6,067,297) in view of Larsson et al. (US-6,463,307 hereafter, Larsson).

Regarding claim 1, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37 and Col. 6 lines 54-59) Beach differs from the claimed invention by not explicitly reciting a mobile terminal that requests for a transition from an active state to a less active state, upon which the NIC requests the access point to be entered into a WLAN sleep state and then enters the sleep state after acknowledgement from the access point.

In an analogous art, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 20-60) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power saving of mobile terminals of Beach after modifying it to incorporate the ability of a mobile terminal to enter and exit a power saving mode of Larsson. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point

Art Unit: 2617

know to queue messages for the mobile terminal. (Col. 2 lines 33-64 and Col. 3 lines 20-60)

Regarding claim 7, Beach in view of Larsson teaches an access point that disassociates mobile terminals without using a disassociation signal. (Beach Col. 3 lines 22-28)

Regarding claim 11, Beach in view of Larsson teaches a mobile terminal that associates with the access point on transition from a power saving state to an active state. (Larsson Col. 5 line 52 through Col. 6 line 9)

Regarding claim 13, Beach teaches a method for power control in a mobile terminal used in a wireless local area network (WLAN) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37 and Col. 6 lines 54-59) Beach differs from the claimed invention by not explicitly reciting a mobile terminal that initializes at a point of time later than a time-out interval due to inactivity in order to lower the system state.

In an analogous art, Larsson teaches a mobile terminal that initializes at a point in time later than a time-out interval due to inactivity in order to conserve power. (Col. 1 line 66 through Col. 2 line 5 and Col. 2 lines 10-23) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power control of Beach after modifying it to incorporate the ability of a mobile terminal to initialize at a point in time later than a time-out interval of Larsson. One of ordinary skill in the art would have been motivated to do this since an inactive mobile terminal

conserves more battery power when in a power saving mode for a longer period of time.  
(Col. 2 lines 33-59 and Col. 3 lines 20-60)

Regarding claim 14, Beach in view of Larsson teaches a method for power saving in which the mobile terminal goes from a power saving mode to an active mode when data is pending for transmission. (Beach Col. 10 lines 28-35 and Col. 11 line 33 through Col. 12 line 7)

Regarding claim 15, Beach in view of Larsson teaches a timer in the mobile terminal used to initiate the mobile terminal to enter a power saving state. (Larsson Fig. 4 [406])

Regarding claim 16, Beach in view of Larsson teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

Claims 3, 10, 12, 18, and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US-6,067,297) in view of van Bokhorst et al. (US-6,192,230 hereafter, van Bokhorst).

Regarding claim 3, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59 and Col. 7 lines 4-7) Beach differs from the claimed invention by not explicitly reciting a mobile terminal that requests for a transition from an active state to a less active state, upon which the NIC requests the access point to be entered into a WLAN

Art Unit: 2617

sleep state and then enters the sleep state after acknowledgement from the access point.

In an analogous art, van Bokhorst teaches a method and apparatus for power saving in a mobile terminal ad hoc network where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 7 lines 15-56) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power saving in an ad hoc network of Beach after modifying it to incorporate the ability of a mobile terminal in an ad hoc network to request to enter or exit the power saving mode of van Bokhorst. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves the battery power of the mobile device and enables efficient use of the wireless medium by limiting the amount of messages being sent between mobile devices. (Col. 1 lines 23-25 and Col. 2 lines 7-35)

Regarding claim 10, Beach in view of van Bokhorst teaches an access point that disassociates mobile terminals without using a disassociation signal. (Col. 3 lines 22-28)

Regarding claim 12, Beach in view of van Bokhorst teaches a mobile terminal in an ad hoc network that associates with network on the transition from a power saving state to an active state. (Col. 6 lines 43-48)

Regarding claim 18, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power

Art Unit: 2617

states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59 and Col. 7 lines 4-7) Beach differs from the claimed invention by not explicitly reciting a mobile terminal that requests for a transition from a less active state to a more active state, upon which the NIC enters a more active state.

In an analogous art, van Bokhorst teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 7 lines 15-56 & Col. 8 line 46 through Col. 9 line 27) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power saving in an ad hoc network of Beach after modifying it to incorporate the ability of a mobile terminal in an ad hoc network to request to enter or exit the power saving mode of van Bokhorst. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal, lets the access point know to queue messages for the mobile terminal and when to send them immediately. (Col. 6 lines 43-51)

Regarding claim 23, Beach in view of van Bokhorst teaches a NIC that enters its lowest power consumption mode. (Col. 8 lines 35-42)

Claims 5, 8, 19-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Beach (US-6,067,297) in view of van Bokhorst et al. (US-6,192,230 hereafter, van Bokhorst), and further in view of Chen et al. (US-5,502,724 hereafter, Chen).



Regarding claim 5, Beach in view of van Bokhorst teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, an operating system compatible with the power states and where the mobile terminal can request to enter or exit the power saving mode. (Beach Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59, Col. 7 lines 4-7, and van Bokhorst Col. 7 lines 15-56) The combination of Beach in view of van Bokhorst differs from the claimed invention by not explicitly reciting a mobile terminal that requests a disconnection from the ad hoc network.

In an analogous art, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in an ad hoc network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power saving in an ad hoc network of Beach in view of van Bokhorst after modifying it to incorporate the ability to request to be disconnected from the network of Chen. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves battery power of the mobile device and it is quite possible that a mobile terminal would leave the effective connection range of the communication network. (Col. 2 lines 9-12)

Regarding claim 8, the combination of Beach in view of van Bokhorst teach a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible

Art Unit: 2617

with IEEE 802.11 power save procedures, an access point, an operating system compatible with the power states and where the mobile terminal can request to enter or exit the power saving mode. (Beach Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59, Col. 7 lines 4-7, and van Bokhorst Col. 7 lines 15-56) The combination of Beach in view of van Bokhorst differs from the claimed invention by not explicitly reciting a mobile terminal that requests a disconnection from the ad hoc network.

In an analogous art, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in an ad hoc network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the power saving in an ad hoc network of Beach in view of van Bokhorst after modifying it to incorporate the ability to request to be disconnected from the network of Chen. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves battery power of the mobile device and it is quite possible that a mobile terminal would leave the effective connection range of the communication network. (Col. 2 lines 9-12)

Regarding claim 19, Beach in view of van Bokhorst and Chen teaches a mobile terminal that is disassociated from the access point without using a disassociated signal. (Beach Col. 3 lines 22-28)

Regarding claim 20, Beach in view of van Bokhorst and Chen teaches a mobile terminal that is disassociated from the access point without using a disassociating signal. (Beach Col. 3 lines 22-28)

Regarding claim 21, Beach in view of van Bokhorst and Chen teaches a mobile terminal that associates with an access point on transition from a sleep mode to an awake mode. (Beach Col. 10 lines 28-35)

Regarding claim 22, Beach in view of van Bokhorst and Chen teaches a mobile terminal that associates with an access point on transition from a sleep mode to an awake mode. (Beach Col. 10 lines 28-35)

Regarding claim 24, Beach in view of van Bokhorst and Chen teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

Regarding claim 25, Beach in view of van Bokhorst and Chen teaches a NIC that enters its lowest power consumption mode. (Beach Col. 8 lines 35-42)

#### **(10) Response to Argument**

With respect to the Appellant's argument pertaining to claim 1 that *those patents are not directed to the problem addressed by the Applicant's invention* (Page 6 Para 2), the Examiner disagrees.

Beach is directed to access points and mobile devices that communicate using the IEEE 802.11 protocol (Col. 3 lines 8-11), support operating in a power-saving mode (Col. 1 line 65 through Col. 2 line 16), and using network interface cards. (Col. 3 lines 8-11) Larsson is directed to a more sophisticated power saving scheme in a mobile terminal that has active communication connections using the 802.11 protocol. (Col. 1 lines 8-12, Col. 2 lines 42-51 and Col. 3 lines 20-60),

With respect to the Appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

With respect to the Appellant's argument pertaining to claim 1 that *the Examiner's conclusion of obviousness is based upon improper hindsight reasoning* (Page 7), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

With respect to the Appellant's argument pertaining to claim 1 that *there is no suggestion to combine the references* (Page 7), the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, the motivation to combine Beach in view of Larsson, *since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal*, can be found in Larsson (Col. 2 lines 33-64 “Whenever a terminal decides to enter or exit the power saving mode, it informs the BS. When the terminal is in the power saving mode, the BS buffers all incoming packets designating the terminal”, Col. 3 lines 20-60 “power consumption of a mobile terminal can be further reduced” and finally Col. 3 lines 48-60 “when the mobile terminal is awake, it can send a hibernation request to the BS”).

With respect to the Appellant’s assertion that *since the base station knows when the mobile terminal will be listening for a paging message, the base station has entered into a power saving mode by not trying to contact the mobile terminal until the specified time is unfounded* (Page 7 bottom paragraph), the Examiner disagrees.

Larsson obviously teaches the base station is saving power by not continually paging the mobile terminal since the base station knows that when the mobile terminal is in hibernation mode, the mobile terminal will only be listening for a paging message at specific times. (Col. 4 lines 61-66)

With respect to the Appellant’s argument that *sending requests between the devices to find out the devices power states is inherent in the claims* (Page 8), the Examiner disagrees.

The Examiner views “sending requests between the devices to find out” to be a request for the current status of the power state. However, the claims appear to be focused on requesting power control, not the current power status. The Examiner sees “sending requests between the devices to find out the devices power states” to be a separate step from “requesting a transition from an active state to a less active state”, which is not in the claims.

With respect to the Appellant’s argument pertaining to claims 3, 5, 7, 8, 10-16, 18-25 (Page 7), the Appellant is relying upon the dependence of claim 1 and presumed deficiencies of the Examiner’s rejections. Since no new issues are raised, the Examiner’s original rejection stands in view of the further defined reasoning stated above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

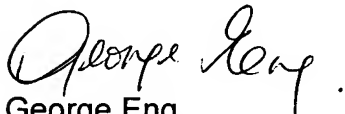
Respectfully submitted,

A handwritten signature in black ink, appearing to read "Matthew C. Sams".

Matthew C. Sams  
March 31, 2006

A handwritten signature in black ink, appearing to read "Lester Kincaid".

Conferees:  
Lester Kincaid  
Supervisory Patent Examiner

A handwritten signature in black ink, appearing to read "George Eng".

George Eng  
Supervisory Patent Examiner